

PROCEEDINGS
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DESCRIPTIONS OF TWENTY-THREE NEW POCKET
GOPHERS OF THE GENUS *THOMOMYS*.

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The Mammal Collection of the U. S. Biological Survey still contains a number of apparently nameless species of Pocket Gophers of the genus *Thomomys*. Most of these are here described. In making the necessary comparisons with other members of the genus I have been greatly assisted by Vernon Bailey.

***Thomomys latirostris* sp. nov.**

Type from Little Colorado River, Painted Desert, Arizona. No. $\frac{18993}{24914}$ ♂ ad., U. S. National Museum, Biological Survey Collection. September 22, 1899. C. Hart Merriam and Vernon Bailey. Original No. 504.

Characters.—Size medium; coloration very pale golden fulvous; *rostrum* strikingly broad.

Color.—Upperparts uniform pale ochraceous buff without appreciable admixture of black tipped hairs; underparts, feet, and tail whitish.

Cranial characters.—Skull unique: heavy, massive and angular but not ridged; *rostrum* broadly expanded and broadest at base, the great breadth being in the premaxillæ; nasals constricted in middle, slightly notched behind, and falling far short of premaxillæ; zygomata moderately spreading, angular, their outer sides parallel; bullæ medium, smaller than in *aureus*; interparietal broadly pentagonal.

Measurements.—Type specimen (♂ ad.): total length 232; tail vertebrae 79; hind foot 33.

Thomomys sinaloæ sp. nov.

Type from Altata, Sinaloa, Mexico. No. 96,745, ♂ ad., U. S. National Museum, Biological Survey Collection. March 28, 1899. E. A. Goldman. Original No. 13,607.

Characters.—Size rather large; color dull pale chestnut brown. Related to *cerrinus* from Phoenix, Arizona, but darker and with distinctive cranial characters.

Color.—Upperparts dull pale chestnut brown, fading insensibly into paler chestnut fulvous of underparts; region around mouth pale dusky, not sharply contrasted with throat as in *cerrinus*.

Cranial characters.—Skull rather large and angular with *strongly spreading depressed and sharply angular zygomata*. Similar in general to *cerrinus* but shorter; zygomata more broadly spreading, more depressed, and with more prominent anterior angle; bullæ smaller.

Measurements.—Type specimen (♂ ad.); total length 233; tail vertebrae 73; hind foot 31. Average of 6 adults from type locality; total length 221; tail vertebrae 74; hind foot 31.5.

Thomomys perditus sp. nov.

Type from Lampazos, Nuevo Leon, Mexico. No. $\frac{25695}{32998}$, ♂ ad., U. S. National Museum, Biological Survey Collection. January 22, 1891. C. P. Streater. Original No. 512.

Characters.—Size small; color drab gray; related to *toltecus* but smaller, grayer, and with distinctive skull characters.

Color.—Upperparts drab gray, strongly mixed with black-tipped hairs and washed on sides with buffy (on sides of shoulders and rump becoming buffy fulvous); region around mouth dusky; underparts and fore legs and feet buffy salmon; hind feet soiled whitish.

Cranial characters.—Skull small; braincase broadly swollen; zygomata moderately spreading, the outer sides parallel; interparietal subquadrate; nasals cuneate, notched behind, and ending about on plane of premaxillæ; bullæ medium or rather small. Differs from *toltecus* in having more cuneate nasals which are notched instead of truncate behind, and which end about on plane of premaxillæ instead of falling far short of premaxillæ; post zygomatic notch deeper and broader; upper incisors more prominent.

Measurements.—Type specimen (♂ ad.); total length 195; tail vertebrae 59; hind foot 26.5. Average of 5 adults from type locality; total length 185; tail vertebrae 55; hind foot 25.

Thomomys goldmani sp. nov.

Type from Mapimi, Durango, Mexico. No. 58,075, ♂ ad., U. S. National Museum, Biological Survey Collection. December 15, 1893. E. A. Goldman. Original No. 240.

Characters.—Size very small; back bright fulvous; underparts white. Related to *perditus* but color wholly different and cranial characters distinctive.

Color.—Upperparts bright rusty fulvous, moderately mixed with dark tipped hairs; underparts white; nose and region around mouth dusky.

Cranial characters.—Skull very small; like that of *perditus* but rostrum and premaxillæ decidedly narrower and smaller, and nasals falling short of premaxillæ.

Measurements.—Type specimen (♂ ad.): total length 208; tail vertebrae 68; hind foot 30. An adult female from type locality: total length 190; tail vertebrae 60; hind foot 27.

***Thomomys baileyi* sp. nov.**

Type from Sierra Blanca, Texas. No. $\frac{18256}{25139}$, ♀ ad., U. S. National Museum, Biological Survey Collection. December 28, 1889. Vernon Bailey. Original No. 870.

Characters.—Size small; coloration rather pale; upper incisors projecting strongly forward.

Color.—Upperparts pale buffy fulvous, varying to ochraceous and strongly mixed with black-tipped hairs; underparts buffy to salmon; region around mouth dusky; inside of cheek pouches and feet whitish; incisors projecting forward.

Cranial characters.—Skull small; zygomata widely spreading, sometimes broadest posteriorly; temporal ridges marked; interparietal subquadrate; nasals emarginate behind and ending nearly on plane of premaxillæ; bullæ medium. In general the skull resembles that of *toltecus*, but it may be distinguished not only by the protruding upper incisors, but also by the longer nasals which are notched instead of truncate behind, longer rostrum, broader interorbital region, less bulging occiput, and much wider and more open post coronoid notch of mandible.

Measurements.—Type specimen (♀ ad.): total length 220; tail vertebrae 72; hind foot 32. Average of 6 adults from type locality: total length 212; tail vertebrae 68; hind foot 30.

***Thomomys nelsoni* sp. nov.**

Type from Parral, Chihuahua, Mexico. No. 96,451, ♀ ad., U. S. National Museum, Biological Survey Collection. September 18, 1898. E. W. Nelson and E. A. Goldman. Original No. 13,035.

Characters.—Size medium or rather small; related to *baileyi* but color chestnut instead of yellowish fulvous, and with distinctive cranial characters.

Color.—Upperparts pale dull chestnut brown mixed on middle of back with black tipped hairs; underparts same color but much paler; nose and region around mouth abruptly dusky; feet whitish, but *brown of hind leg coming well down over ankle and covering part of foot*.

Cranial characters.—Zygomata strongly spreading, broader behind than in front, with well developed anterior angle; temporal impressions marked; interparietal subquadrate becoming subtriangular in old age; nasals narrowly cuneate, notched behind, and falling well short of premaxillæ; bullæ medium; under jaw very long, the postcoronoid notch narrow and completely covered by coronoid process. From *baileyi*, its nearest known relative, it may be distinguished by narrower nasals, narrower interorbital region, strikingly narrower and differently shaped postcoronoid notch, and less protruding upper incisors.

Measurements.—Type specimen (♀ ad.): total length 196; tail vertebrae 60; hind foot 28. An adult male from type locality: total length 207; tail vertebrae 59; hind foot 28.5.

***Thomomys cabezonæ* sp. nov.**

Type from Cabezon, San Geronio Pass, California. No. 53,987, ♂ ad., U. S. National Museum, Biological Survey Collection. June 3, 1893. C. P. Streater. Original No. 2906.

Characters.—Size medium, but smaller than *perpallidus* or *aureus*; ears rather large; tail long; color varying from buffy ochraceous (as in *aureus*) to dull salmon brown.

Color.—Upperparts buffy ochraceous, buffy gray, or even (in the type and darkest specimen of ♂ from type locality) dull drab-brown on back, becoming buffy ochraceous on sides; nose, lips, chin and opening of cheek pouches dusky; underparts varying from whitish to pale salmon.

Cranial characters.—Skull small, angular; zygomata moderately spreading, broadest anteriorly and sharply angular in adults; temporal ridges marked; interparietal rectangular, broader than long in immature skulls; nasals long, with straight sides (not constricted), notched behind, and not reaching near tips of premaxillæ; bullæ medium. Compared with *aureus* and *perpallidus* the skull and jaw are strikingly smaller and lighter, the interparietal quadrangular instead of sub-triangular, the bullæ very much smaller. Compared with *perpallidus* the zygomata are much less spreading.

Measurements.—Type specimen (♂ ad.): total length 235; tail vertebrae 79; hind foot 30. Average of 7 adults from type locality: total length 222; tail vertebrae 78; hind foot 30.

***Thomomys aureus pervagus* subsp. nov.**

Type from Espanola, New Mexico. No. 58,293, ♂ ad., U. S. National Museum, Biological Survey Collection. January 4, 1894. J. Alden Loring. Original No. 1548.

Characters.—Similar to *aureus* but much darker, color chestnut fulvous instead of golden fulvous; upperparts dull chestnut fulvous, the middle part of back broadly mixed with black-tipped hairs; nose and

sides of mouth dusky; chin white; underparts salmon. Nasals broader posteriorly than in *aureus*.

Measurements.—Type specimen (♂ ad.): total length 244; tail vertebrae 76; hind foot 31. Average of 2 males from type locality: total length 245; tail vertebrae 73; hind foot 32.

***Thomomys aureus perpes* subsp. nov.**

Type from Lone Pine, Owens Valley, California. No. $\frac{25091}{32563}$, ♂ ad., U. S. National Museum, Biological Survey Collection. December 23, 1890. E. W. Nelson. Original No. 145.

Characters.—Size rather small; color *buffy gray*, in summer becoming more buffy fulvous.

Color.—Upperparts buffy gray, darkest on head and nose, palest and with strongest buffy suffusion on sides; underparts, feet, and tail buffy whitish. Summer specimens are more buffy fulvous like *aureus*.

Cranial characters.—Skull similar in general to the smaller specimens of *aureus*, but decidedly shorter and with much smaller bullae.

Measurements.—Type specimen (♂ ad.): total length 215; tail vertebrae 65; hind foot 28. Average of 10 adults from type locality: total length 212; tail vertebrae 66; hind foot 28.5.

***Thomomys angularis pascalis* subsp. nov.**

Type from Fresno, San Joaquin Valley, California. No. $\frac{32779}{44762}$, ♂ ad., U. S. National Museum, Biological Survey Collection. May 4, 1892. C. P. Streater. Original No. 1634.

Characters.—Similar to *angularis* but smaller; upperparts less fulvous (more buffy yellowish); underparts very much paler and often marbled irregularly with patches of white; wrists and ankles usually white; ears smaller and dusky; earpatch obsolete or nearly so. Skull smaller and smoother; the temporal ridges not uniting to form a sagittal crest; interorbital constriction less marked; bullae larger; angle of under jaw smaller.

Measurements.—Type specimen (♂ ad.): total length 236; tail vertebrae 80; hind foot 32. Average of 4 males from type locality: total length 212.5; tail vertebrae 71.5; hind foot 30.5. Average of 4 females from type locality: total length 195; tail vertebrae 63; hind foot 28.

***Thomomys fuscus fisheri* subsp. nov.**

Type from Beckwith, Sierra Valley, Plumas County, California. No. 101,238, ♂ ad., U. S. National Museum, Biological Survey Collection. August 3, 1900. Walter K. Fisher. Original No. 1547.

Characters.—Similar to *fuscus* but upperparts very much paler; grayish brown instead of dull fulvous brown.

Cranial characters.—Skull similar to that of *fuscus* but shorter; zygo-

mata more squarely spreading; premaxillæ shorter and broader posteriorly; bullæ less swollen; incisors narrower.

Measurements.—Type specimen (♂ ad.): total length 191; tail vertebrae 62; hind foot 25. Average of 6 specimens from type locality: total length 192; tail vertebrae 58; hind foot 25.

***Thomomys myops* sp. nov.**

Type from Conconully, east base Cascade Range, State of Washington. No. 91,066, ♀ ad., U. S. National Museum, Biological Survey Collection. September 11, 1897. J. Alden Loring. Original No. 4650.

Characters.—Size small; color and external characters generally as in *T. fuscus*; skull peculiar.

Color.—Upperparts dull pale rufous brown; underparts buffy ochraceous, the dark slate underfur showing through; throat, chin, and feet whitish; nose, sides of mouth, ring round eye, and earpatch dull plumbeous, the earpatch darkest.

Cranial characters.—Skull in general similar to that of *quadratus*, but zygomata less quadrate and posterior root shorter; nasals broader, truncate posteriorly, and ending on same plane as premaxillæ, which are remarkably short and truncate posteriorly; bullæ about as in *quadratus*—less swollen than in *fuscus*; under jaw rather massive, about as in *quadratus*—decidedly heavier than in *fuscus*.

Measurements.—Type specimen (♀ ad.): total length 197; tail vertebrae 63; hind foot 26. Average of 7 specimens from type locality: total length 184; tail vertebrae 58; hind foot 24.5.

***Thomomys leucodon navus* subsp. nov.**

Type from Red Bluff, California. No. 57,791, ♂ ad., U. S. National Museum, Biological Survey Collection. December 26, 1893. C. P. Streater. Original No. 3462.

Characters.—Similar to *leucodon* but much smaller; incisors projecting forward, their faces yellow instead of white; upperparts paler and brighter fulvous; underparts buffy ochraceous instead of fulvous.

Cranial characters.—Skull small but very strong and ivory-like in texture; zygomata broadly spreading, broadest posteriorly; nasals cuneate, usually notched behind.

Measurements.—Type specimen (♂ ad.): total length 200; tail vertebrae 67; hind foot 27. Average of 8 specimens from type locality: total length 196; tail vertebrae 65; hind foot 27.

***Thomomys uinta* sp. nov.**

Type from Uinta Mountains, Utah. Altitude 10,000 feet. No. $\frac{22501}{3651}$, ♂ ad., U. S. National Museum, Biological Survey Collection. June 6, 1890. Vernon Bailey. Original No. 1262.

Characters.—Size medium; coloration dark; nose, chin and region around mouth blackish; earpatch black; fore feet and legs dark. Skull long; nasals short.

Color.—Upperparts dull grayish brown with a dull fulvous suffusion and 'pepper and salt' appearance from profuse admixture of black tipped hairs; cheeks and sides of neck grizzled bister; sides grayish or grayish brown; nose, earpatch, and throat dusky; fore legs and feet grayish dusky with a little white at base of toes; hind feet whitish; tail mainly dark above.

Cranial characters.—Skull rather small but larger than that of *fuscus*; zygomata moderately spreading; broadest behind; nasals *short*, falling far short of premaxillæ, and moderately or faintly notched behind; interparietal large, pentagonal or between subquadrate and pentagonal; temporal impressions nearly parallel but not forming ridges as in *talpoides* and *bridgeri*; auditory tubes conspicuous; bullæ and teeth rather large.

Remarks.—This species is so distinct that close comparison with others is unnecessary. The skull may be told at a glance by the very short nasals and relatively long premaxillæ in connection with the size and shape of the interparietal.

Measurements.—Type specimen: total length 220; tail vertebræ 68; hind foot 30. Average of 2 males from type locality: total length 226; tail vertebræ 70.5; hind foot 31. An adult female from type locality: total length 211; tail vertebræ 64; hind foot 28.

Thomomys bridgeri sp. nov.

Type from Fort Bridger, Wyoming. No. $\frac{18858}{25502}$, ♂ ad., U. S. National Museum, Biological Survey Collection. May 27, 1890. Vernon Bailey. Original No. 1207.

Characters.—Rather large. Size and proportions as in *talpoides* but ears having a distinct point posteriorly; coloration dark (similar to *fuscus*, darker and redder than *talpoides*); differs from both *talpoides* and *fuscus* in having chin and openings of cheek pouches *black* instead of white.

Color.—Upperparts usually pale dull chestnut brown, sometimes almost buffy brown, and always well mixed with black hairs; underparts strongly washed with buffy fulvous; nose, earpatch, chin, and openings of cheek pouches dusky; feet whitish.

Cranial characters.—Skull rather large, with marked parallel temporal ridges, long rostrum and nasals (nasals deeply notched behind and squarish spreading zygomata. Similar in general to *talpoides*, but rostrum and nasals much longer; nasals deeply notched behind; auditory tube strongly ossified and widely protruding. Compared with *T. vinta*, whose range it joins, it differs strikingly in the great length of the nasals, broadly spreading zygomata, smaller and differently shaped interparietal, much more strongly developed temporal ridges, and decidedly larger size.

Measurements.—Type specimen (♂ ad.): total length 237; tail vertebrae 71; hind foot 34. Average of 8 adults from type locality: total length 228; tail vertebrae 69; hind foot 31.5.

***Thomomys clusius ocius* sp. nov.**

Type from Fort Bridger, Wyoming. No. $\frac{18852}{25386}$, ♂ ad., U. S. National Museum, Biological Survey Collection. May 24, 1890. Vernon Bailey. Original No. 1194.

Characters.—Similar to *clusius* but slightly smaller and much paler, the upperparts pale buffy; sides of nose and region around mouth dusky plumbeous; cheeks pale buffy gray; sides whitish, tinged with buffy; feet and underparts white.

Cranial characters.—Skull like that of *clusius* but zygomata less spreading; temporal ridges a little more strongly developed; interparietal larger; bullae decidedly larger.

Measurements.—Type specimen: total length 204; tail vertebrae 60; hind foot 26. Average of 8 adults from type locality: total length 197; tail vertebrae 57; hind foot 25.

***Thomomys idahoensis* sp. nov.**

Type from Birch Creek, Idaho. No. $\frac{23482}{30906}$, ♂ ad., U. S. National Museum, Biological Survey Collection. August 8, 1890. C. P. Streater. Original No. 129.

Characters.—Size small; coloration pale. Similar in general to *clusius* but much smaller and paler.

Color.—Upperparts grayish buff strongly washed with buffy fulvous, often with 'pepper and salt' appearance; underparts, tail, and feet buffy white.

Cranial characters.—Skull small and rather light, with enormous bullae and narrow zygomata. In general like *clusius* but much smaller: *bullae much larger and more swollen*; nasals long and rather slender, with straight sides.

Measurements.—Type specimen: total length 179; tail vertebrae 47; hind foot 23. Average of 10 specimens from type locality: total length 172; tail vertebrae 51; hind foot 22.5.

***Thomomys desertorum* sp. nov.**

Type from Mud Spring, Detrital Valley, Arizona. No. $\frac{5387}{6082}$, ♂ ad., Merriam Collection. February 21, 1889. Vernon Bailey. Original No. 598.

Characters.—Size small; coloration buffy or golden fulvous, much as in *aureus*. Does not require comparison with any known species.

Color.—Upperparts (including tail) bright ochraceous, varying from buffy fulvous to bright orange fulvous; dark nose patch usually reaching up to between eyes and often to between ears; underparts varying from buffy to salmon fulvous; chin usually dusky; feet whitish; ear-patch dark.

Cranial characters.—Skull very small, much smaller than *fulvus*; zygomata strongly bowed outward—the anterior angle marked; interparietal subquadrate, broader than long; nasals notched at hinder end, not reaching near ends of premaxillæ; bullæ large and swollen.

***Thomomys pygmaeus* sp. nov.**

Type from Montpelier Creek, Idaho (alt. 6700 ft.). No. 55,271, ♂ ad., U. S. National Museum, Biological Survey Collection. July 29, 1893. Vernon Bailey. Original No. 4150.

Characters.—Size smallest of the known species; feet very small; color dark; skull sub-cylindrical.

Color.—Upperparts dark rufous brown; underparts buffy fulvous, the dark underfur showing through; nose dusky; feet whitish.

Cranial characters.—Skull similar in general to that of *idahoensis* but much smaller; braincase more cylindrical; interparietal larger and transversely oval; nasals short, rather broad and emarginate at posterior end; bullæ strikingly smaller; teeth large—relatively larger than in *idahoensis*.

Measurements.—Type specimen (♂ ad.): total length 177; tail vertebrae 46; hind foot 22. Another male from type locality: total length 165; tail vertebrae 40; hind foot 20.

***Thomomys douglasi oregonus* subsp. nov.**

Type from Oregon City, Willamette Valley, Oregon. No. 56,939, ♂ ad., U. S. National Museum, Biological Survey Collection. October 24, 1893. C. P. Streater. Original No. 3340.

Characters.—Externally like *douglasi*, but usually lacking the white spot on breast.

Cranial characters.—Compared with *douglasi* the zygomata are larger and much more broadly bowed outward and rounded, the outer sides parallel instead of diverging anteriorly; nasals narrower posteriorly but sides straight as in *douglasi*; interparietal decidedly larger and longer anteroposteriorly, subtriangular instead of transversely oval, with posterior margin straight and not encroaching on supraoccipital; bullæ more swollen; pterygoid notch V-shaped instead of U-shaped.

Measurements.—Type specimen (♂ ad.): total length 220; tail vertebrae 70; hind foot 30. Average of 10 adults from type locality: total length 213; tail vertebrae 66.5; hind foot 29.

Thomomys limosus sp. nov.

Type from White Salmon, Gorge of the Columbia, Washington. No. 89,724, ♂ ad., U. S. National Museum, Biological Survey Collection. June 26, 1897. J. Alden Loring. Original No. 4382.

Characters—Similar in size and proportions to *douglasi* but color much darker; cranial characters distinctive.

Color.—Upperparts dark brown; underparts dark slate, the tips more or less deeply washed with buffy or buffy fulvous; feet and tail whitish.

Cranial characters.—Compared with typical *douglasi* from Fort Vancouver, the zygomata are much more broadly bowed outward and less angular, the nasals slightly constricted behind anterior third and somewhat expanded and emarginate at posterior end, giving them a 'fish-tail' form; interpterygoid space V-shaped instead of U-shaped; angular process of under jaw decidedly larger and more spreading.

Measurements.—Type specimen: total length 224; tail vertebrae 68; hind foot 30. Average of 4 adults from type locality: total length 219; tail vertebrae 68; hind foot 29.

Thomomys hesperus sp. nov.

Type from Tillamook, Oregon. No. 69,825, ♀ ad., U. S. National Museum, Biological Survey Collection. November 9, 1894. J. E. McLellan. Original No. 1189.

Characters.—Size small; feet very small (hind foot with claws 24); tail short; ears small; color deep rufous.

Color.—Upperparts deep rufous; nose, earpatch, and ring round eye dusky; underparts varying from buffy fulvous to salmon fulvous; tail dark above, at least on basal half, whitish below and at tip all round; fore and hind feet whitish.

Cranial characters—Skull small and light; interparietal large and broadly sub-triangular; bulke small and rounded, short anteriorly; incisors narrow.

Remarks.—This species differs so markedly from its nearest allies that close comparison is unnecessary. From *T. melanops* Merriam from the Olympic Mountains, which appears to be its nearest relative, it differs in much smaller size, strikingly smaller feet and skull; very much narrower incisors; smaller, shorter, and more rounded bulke; smaller and narrower basioccipital, much shorter rostrum and nasals, shorter tail, and more rufous coloration.

Measurements.—Type specimen (♀ ad.): total length 175; tail vertebrae 54; hind foot 24. Average of 3 females from type locality: total length 179; tail vertebrae 51.5; hind foot 24.

Thomomys niger sp. nov.

Type from Seaton, near mouth of Umpqua River, Oregon. No. 69,407, ♂ ad., U. S. National Museum, Biological Survey Collection. October 6, 1894. J. E. McLellan. Original No. 1147.

Characters.—Size medium; feet large; tail medium; ears short; head and body all round *glossy slate black* with greenish iridescence; nose duller, feet and tail white, sometimes irregularly blotched with dusky.

Cranial characters.—Skull of medium size, massive, showing well developed temporal ridges; interparietal oval or broadly subtriangular; zygomata moderately spreading and rounded; nasals emarginate, strongly and abruptly narrowed on posterior two-thirds.

Remarks.—In coloration the 6 specimens at hand from the type locality strikingly resemble *T. orizabæ* from southern Mexico. They differ from *orizabæ* in having less black on the feet and tail, and in marked cranial characters. The nearest relative of *T. niger* appears to be *T. douglasi* from the Columbia River. It differs from *douglasi*, apart from color, in slightly smaller size and in the following cranial characters: frontals narrower interorbitally; zygomata rounded instead of angular, their outer sides parallel instead of diverging anteriorly; nasals abruptly constricted between anterior and middle thirds and narrower posteriorly (instead of having straight sides); bullæ heavier anteriorly; molar series of same length as in *douglasi* but broader; incisors strikingly large and broad; underjaw deep, the angular process much more heavily developed.

Measurements.—Type specimen (♂ ad.): total length 225; tail vertebrae 81; hind foot 30. Average of 5 adults from type locality: total length 215; tail vertebrae 72; hind foot 30.